

# **Postdoctoral Research Associate in Growth and Electronic and Optical Characterization of Compound Semiconductors**

**Chemical Sciences Division  
Physical Sciences Directorate  
Oak Ridge National Laboratory  
Oak Ridge, Tennessee**

**ORNL08-117-CSD**

## **Project Description:**

The Chemical Sciences Division at Oak Ridge National Laboratory invites applications for an experimental postdoctoral position in the fields of growth and characterization of nanostructured compound semiconductors. This is a new program supported by US Department of Energy for developing nanowire-based semiconductors for X-ray and gamma-ray detection, as well as for application to light emitting diodes (LED). The candidate will perform the research involving construction and use of a pulsed laser deposition system and characterization of electronic and optical properties of compound semiconductor films and nanostructures.

## **Qualifications:**

We are seeking candidates with expertise in pulsed laser deposition (PLD) and semiconductor doping. The focus of this research will be on the synthesis and characterization of planar and nanowire compound semiconductor p/n junctions and on understanding electrical transport and tunneling, optical transitions, and properties that are of interests to radiation detection. The candidate will work in close interaction with ORNL's Center of Nanophase Materials Science (CNMS) and other groups working in nanowire synthesis and radiation detection. This position requires a Ph. D. in material sciences, semiconductor physics, or electronic engineering with an emphasis on PLD development and compound semiconductor growth. Experience in X-ray diffraction, reflection High Energy Electron Diffraction (RHEED), optical spectroscopy, Hall-effect measurements, and/or UV photodetectors is an advantage. Excellent oral and written communication skills are required, and presentations and publication of scientific results in peer-reviewed journals are expected. The applicant must have the ability to work in a team and interact effectively with a broad range of colleagues. Demonstrated ability to communicate in English to an international scientific audience is essential. All degree requirements must be completed before starting the appointment.

## **Technical Questions:**

Technical questions regarding the position can be directed to Dr. Jun Xu, [xuj2@ornl.gov](mailto:xuj2@ornl.gov).

## **How to Apply:**

Qualified applicants may apply online at [https://www2.ornl.gov/ORNL\\_POST/](https://www2.ornl.gov/ORNL_POST/). All applicants will need to register before they can begin the online application. For complete

instructions, on how to apply, please see the instructions at <http://www.ornl.gov/orise/edu/ornl/orni-pdpm/application.htm>. When applying for this position, please reference the position title and number.

Applications will be accepted until Dec. 1, 2008, or until the position is filled.

This appointment is offered through the ORNL Postgraduate Research Participation Program and is administered by the Oak Ridge Institute for Science and Education (ORISE). The program is open to all qualified U.S. and non-U.S. citizens without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.